Arid Zone Monitoring
Species Profile

Cow
Bos taurus, Bos indicus

Language names
Maranpala, Pweleke, Puluka, Puluku, Purluman, Pulimanu
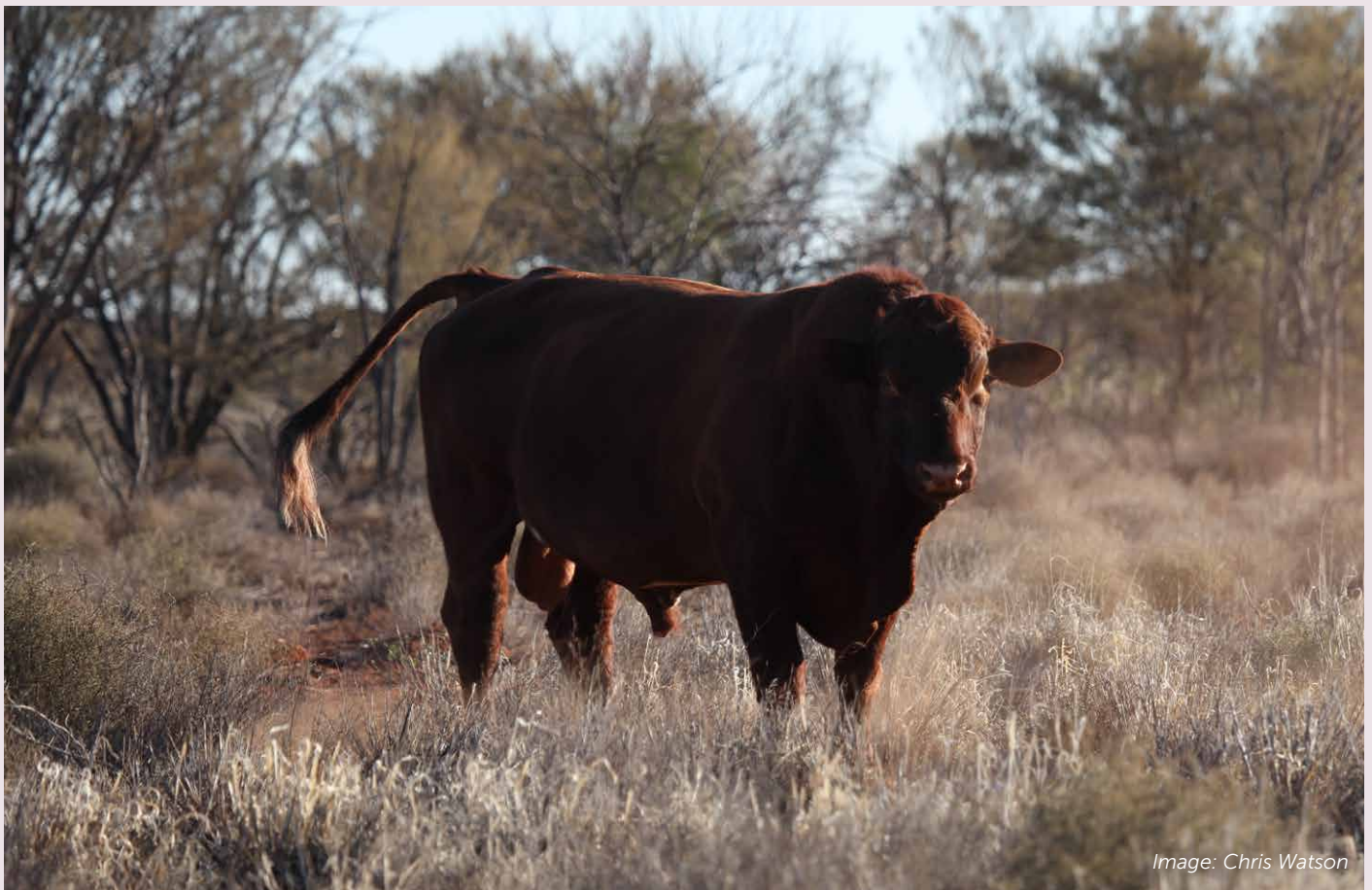
Introduced species

Image: Chris Watson

Feral bull in central Australia.

Image: Jaana Dielenberg

Waterhole damaged by cattle trampling.

Impacts
- Damage to country (trampling, compaction, soil damage and erosion)
- Compete with native species for food and water
- Foul waterholes and waterways (increased nutrients and sediments)
- Spread weeds (through dung)

Animal Description
Cows are large and muscular animals with a small head and long snout. Some have horns. Cows vary in colour but are commonly grey, red-brown or white. Females are generally smaller than males; bulls can reach nearly one tonne.

Cow hoof print.

Cow tracks in hard sand.

Cow tracks in soft sand.

Image: wilfredor (Wikimedia Commons)

Fresh cow scat.

Image: Naomi Indigo

Old cow scat.

Arid Zone Monitoring project findings

Cow distribution

Cows (dairy and beef) were introduced to Australia in 1788 with the First Fleet. Managed herds of cattle occur in all states and territories of Australia and number about 25 million. There are also an unknown number of feral cattle, which have escaped domestic herds and are living wild.

The maps below summarise the detections of cows over time in the AZM dataset. They show that cows are found in many parts of central Australia, and have been detected wherever people have surveyed, since the 1980s. Each blue dot shows a survey site where cows were recorded in that decade. The grey dots show all the other sites that were surveyed, but where cows were not recorded in that decade. These records were made by Indigenous Ranger groups, land councils, NGOs, government agencies and researchers. The information about the overall distribution in the map background is taken from Australian Faunal Directory[1].
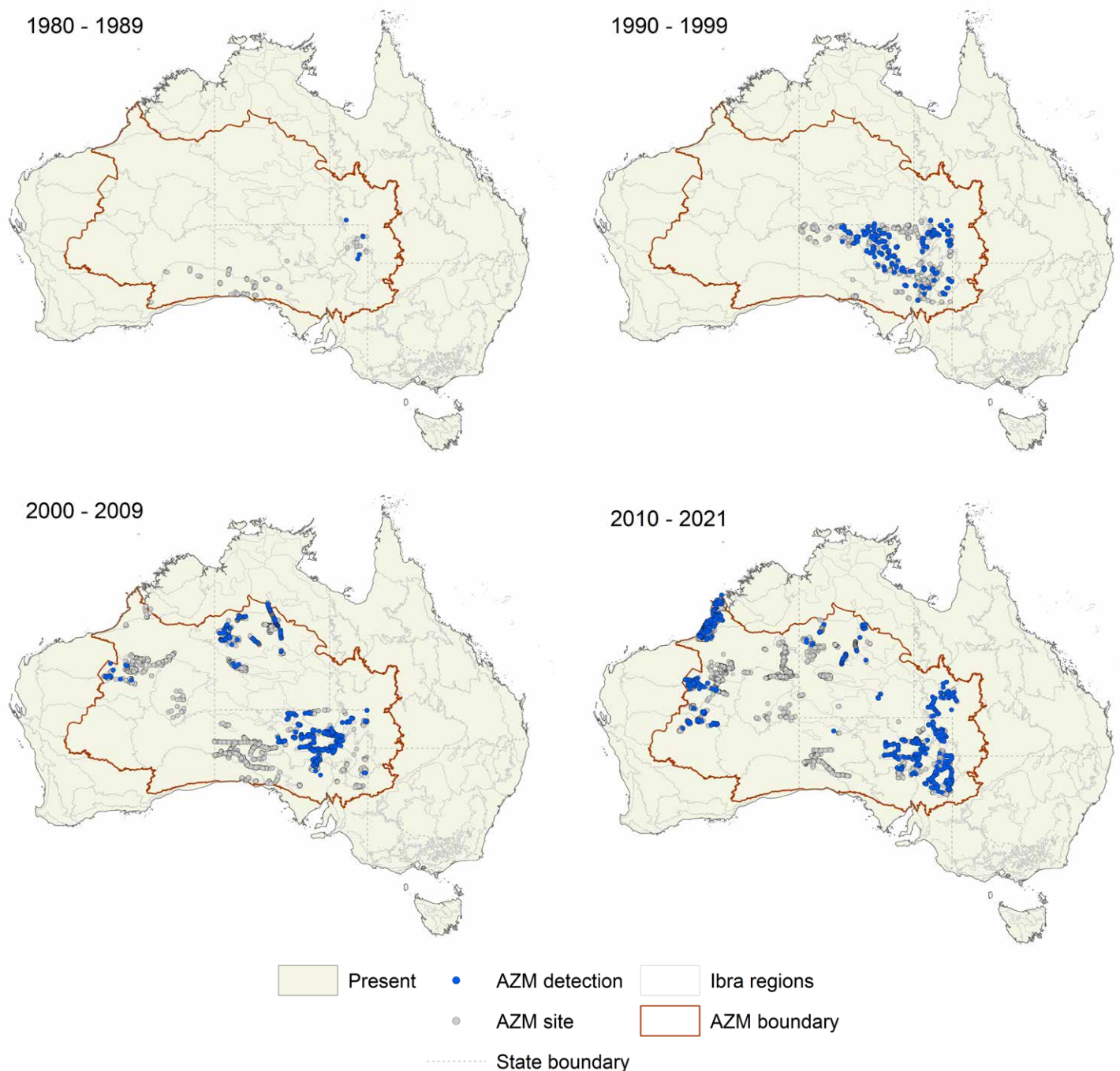

The maps above are based on data shared by data providers with the AZM project. The data are from track and sign surveys. This method is great for detecting species that live in sandy deserts, but not as good for species that prefer rocky habitats, or species with distributions that are mostly outside the central deserts. The method also works best for larger-bodied animals with tracks that are easily identified.

It is possible that extra surveys have been carried out over the past 40 years that have not yet been shared. If you see 'gaps' in the maps that you could fill by sharing your data, let us know.

Cow detection rates

Cows were detected in over 14% of all surveys in the AZM dataset. Across the whole AZM project dataset, cows were the 7th most frequently recorded mammal, and the 5th most common feral mammal species.

The map below shows the average detection rate for cows across all surveys carried out in each bioregion, since the 1980s. Detection rates have been higher in the eastern part of the project area, and in the far northwest (deeper blue shading), which are closer to cattle production areas.

Detection rate

0% — 100%

- • Species detections
- ○ Non-detections
- ▭ Study area
- ▭ Species distribution
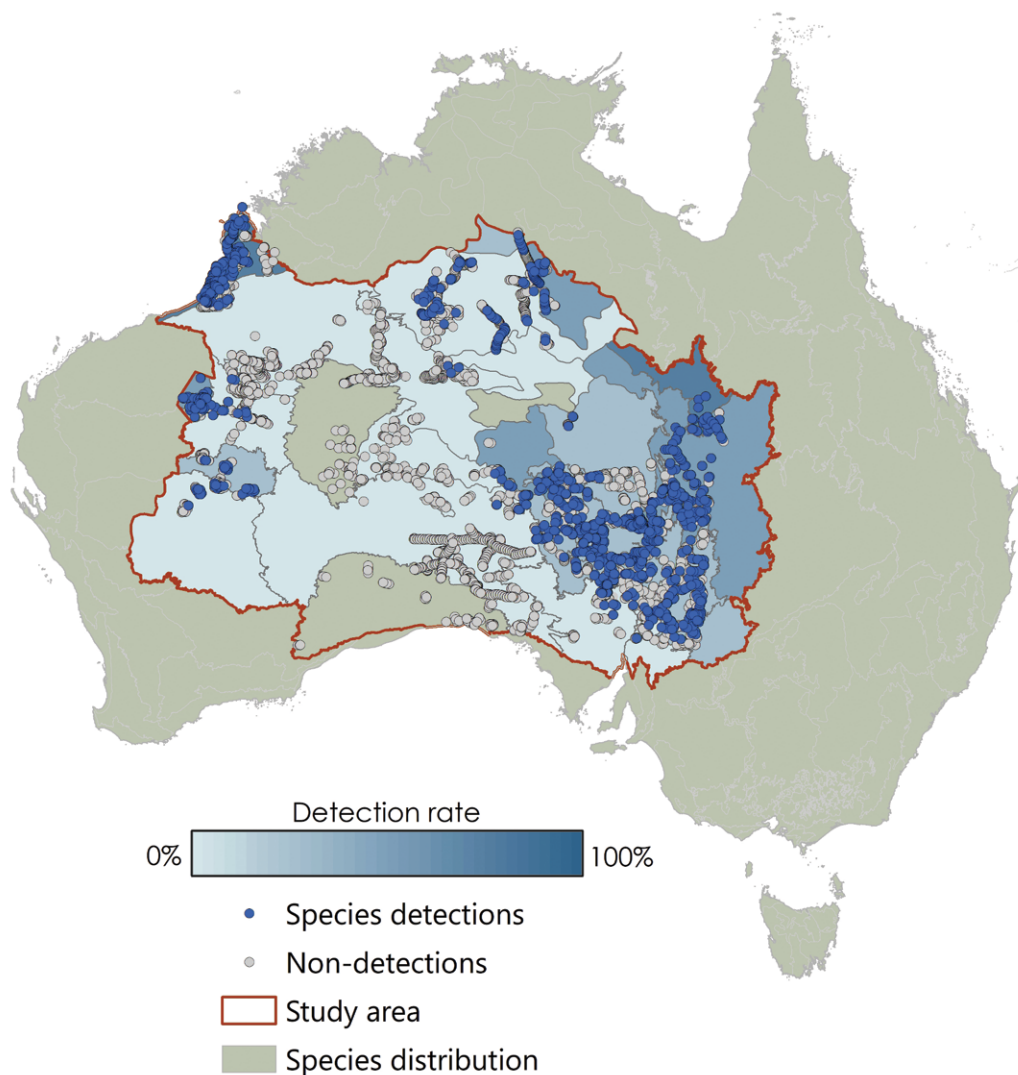
Things to think about when surveying for cows

- Survey during good conditions (in the early morning is best, not too windy and not straight after rain).

- Organise to do surveys at regular times every year – for example, before the wet or hot season (October) and in the early dry season or early cool time (April).

- Follow advice of experienced trackers - know how to tell cow tracks apart from other species before you go to survey.

- Record the age of the sign, because cow tracks and scats can hang around for a long time and make cows seem more common than they really are.

- If you want to see changes over time, you will need to go back to the same areas to sample over several years. If you want to see if management actions (culling or fire) are working, you need to sample many different sites, before and after the action. You might need help from a scientist to make the sampling design strong.

Cow habitat suitability

The habitat suitability model can tell us about where cows are most likely to be found. The analysis considered climate factors like annual, seasonal and daily temperature and rainfall; landform factors like elevation and slope; soil factors; and habitat factors like the amount of vegetation (NDVI) and fire frequency.

The model suggests that cows prefer areas of low elevation and moderate rainfall; in drier areas they need to be close to water. The map shows us cows are more likely to be found in the east, and the northern fringes of the deserts. The map only shows habitat suitability inside the AZM project boundary, but cows are also found outside the project area, probably in higher densities. The habitat suitability model does not predict well in large areas where there has not been any sampling, for example in parts of the Great Sandy Desert or the Great Victoria Desert; getting more survey data from these areas would improve the model.

Habitat suitability
High
Low

Present
State boundary
AZM boundary
Ibra regions
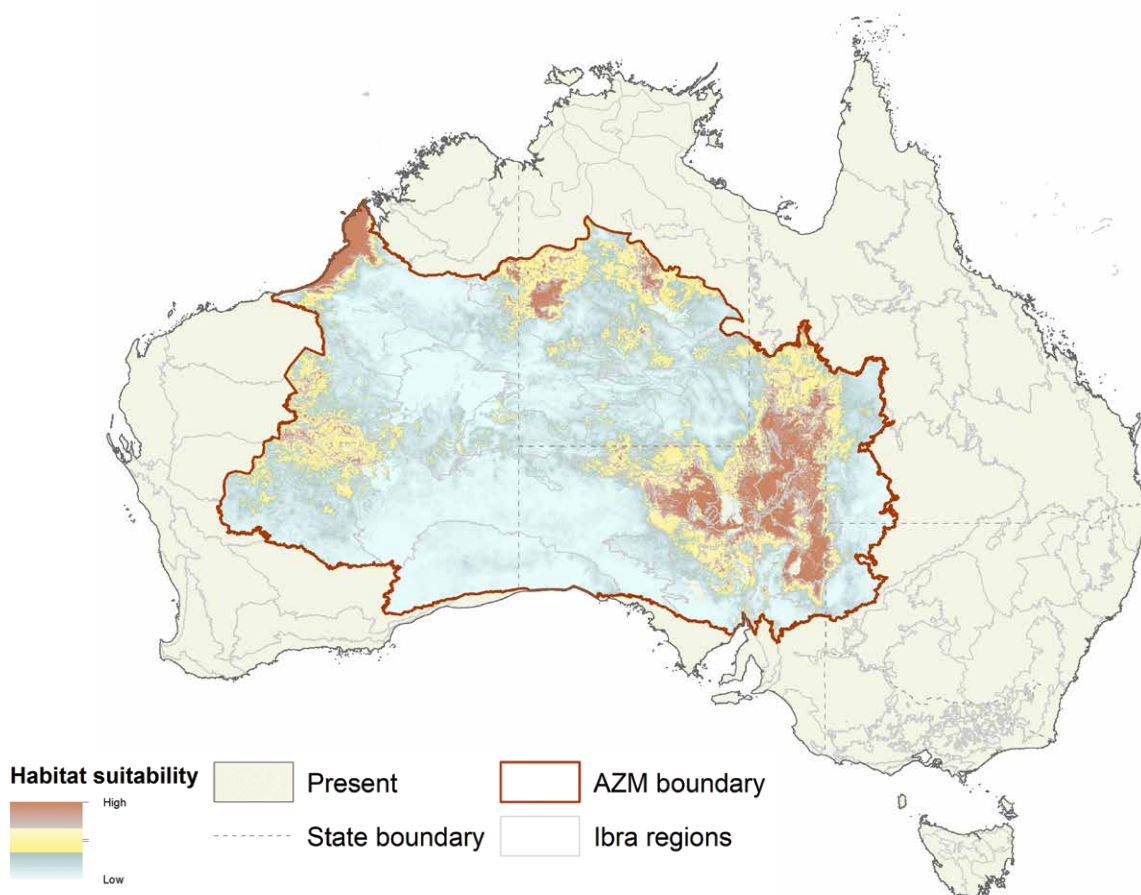
References

[1] ABRS. Australian Faunal Directory. 2021; https://biodiversity.org.au/afd/home. Accessed June, 2021.

Threatened Species Recovery Hub

National **Environmental** Science Programme